

$$\begin{array}{c}
 120 \\
 \swarrow \searrow \\
 2 \times 60 \\
 \swarrow \searrow \\
 2 \times 30 \\
 \swarrow \searrow \\
 2 \times 15 \\
 \swarrow \searrow \\
 3 \times 5
 \end{array}$$

$$\begin{array}{c}
 100 \\
 \swarrow \searrow \\
 2 \times 50 \\
 \swarrow \searrow \\
 2 \times 2 \times 25 \\
 \swarrow \searrow \\
 2 \times 2 \times 5 \times 5
 \end{array}$$

$$(2 \times 2 \times 5) \times (2 \times 3 \times 5)$$

$$2 \times 2 \times 2 \times 3 \times 5$$

For c.f. use ONLY the "oval"

1) List every # in the oval. 2, 5

2) Multiply all combos of #'s in oval $2 \times 5 = 10$

$$2 \times 2 = 4$$

$$2 \times 2 \times 5 = 20$$

3) Statement

$$CF = 2, 4, 5, 10, 20$$

$$* \text{ Hmt L.C.M} = \bigcirc \times \square$$

$$(2 \times 2 \times 5) \times (2 \times 3 \times 5) = \text{LCM}$$

$$= 600$$

$$\text{2nd L.C.M} = 600 \times 2$$

$$\begin{array}{l}
 = 1200 \\
 \text{3rd L.C.M} = 600 \times 3 \\
 = 1800
 \end{array}$$

2.

$$\begin{array}{c}
 444 \\
 \swarrow \searrow \\
 2 \times 222 \\
 \swarrow \searrow \\
 2 \times 111 \\
 \swarrow \searrow \\
 3 \times 37 \\
 2 \times 2 \times 3 \times 37 \\
 = 2^2 \times 3 \times 37
 \end{array}$$

c)

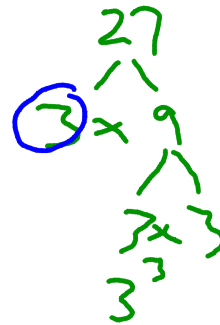
$$\begin{array}{c}
 102 \\
 \swarrow \searrow \\
 2 \times 51 \\
 \swarrow \searrow \\
 3 \times 17 \\
 2 \times 3 \times 17
 \end{array}$$

b)

$$\begin{array}{c}
 162 \\
 \swarrow \searrow \\
 2 \times 81 \\
 \swarrow \searrow \\
 3 \times 27 \\
 \swarrow \searrow \\
 3 \times 9 \\
 \swarrow \searrow \\
 3 \times 3 \\
 2 \times 3 \times 3 \times 3 \times 3 \\
 2 \times 3^4
 \end{array}$$

d)

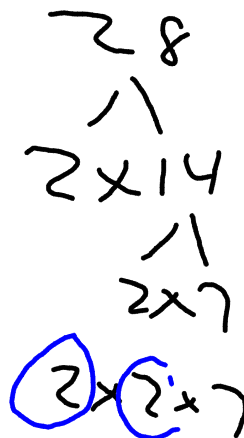
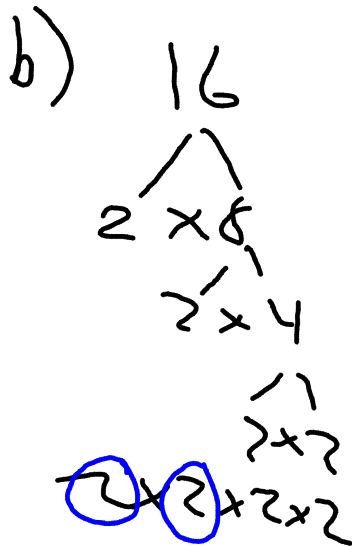
$$\begin{array}{c}
 1225 \\
 \swarrow \searrow \\
 5 \times 245 \\
 \swarrow \searrow \\
 5 \times 49 \\
 \swarrow \searrow \\
 7 \times 7 \\
 5 \times 5 \times 7 \times 7 \\
 5^2 \times 7^2
 \end{array}$$



$$3 \times 5 \times 3 \times 3$$

$$L.C.M = 3 \times 5 \times 3 \times 3$$

$$\begin{aligned}
 &= 135 \\
 \text{H.C.F} &= 135 \times 2 \\
 &= 270
 \end{aligned}$$



$$2 \times 2 \times 2 \times 2 \times 7$$

$$L.C.M = 2 \times 2 \times 2 \times 2 \times 7$$

$$\begin{aligned}
 &= 112 \\
 \text{H.C.F} &= 112 \times 2 \\
 &= 224
 \end{aligned}$$

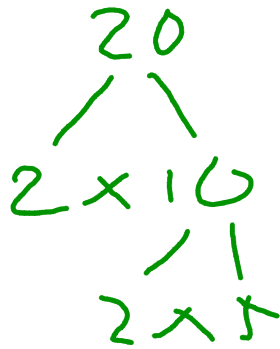
$$\begin{array}{c}
 18 \\
 \swarrow \searrow \\
 3 \times 6 \\
 \swarrow \searrow \\
 2 \times 3 \\
 \textcircled{2} \times 3 \times 3
 \end{array}$$

$$\begin{array}{c}
 32 \\
 \swarrow \searrow \\
 2 \times 16 \\
 \swarrow \searrow \\
 2 \times 8 \\
 \swarrow \searrow \\
 2 \times 4 \\
 \swarrow \searrow \\
 2 \times 2 \quad 2 \times 2 \\
 \textcircled{2} \times 2 \times 2 \times 2 \times 2 \times 2
 \end{array}$$

$$\textcircled{2} + \boxed{3 + 3 + 2 + 2 + 2 + 2}$$

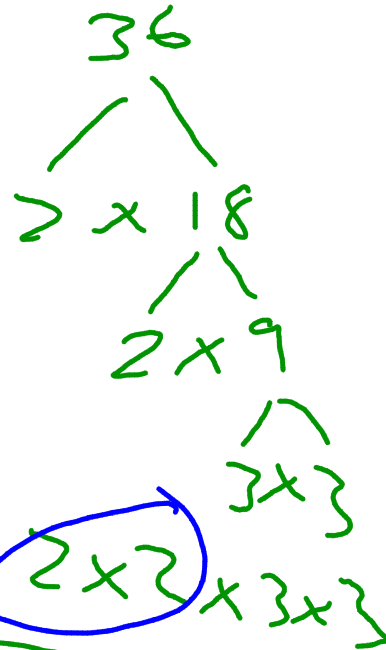
$$\begin{aligned}
 \text{L.C.M} &= 2 \times 3 \times 3 \times 2 \times 2 \times 2 \times 2 \\
 &= 288
 \end{aligned}$$

$$\begin{aligned}
 \text{2nd} \\
 \text{LCM} &= 576
 \end{aligned}$$



$$2 \times 2 \times 5$$

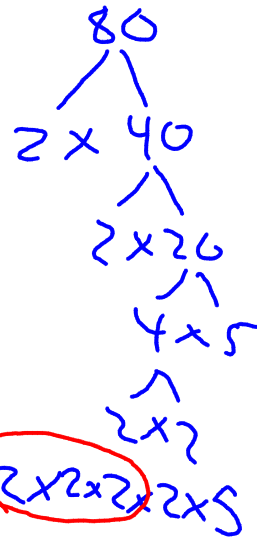
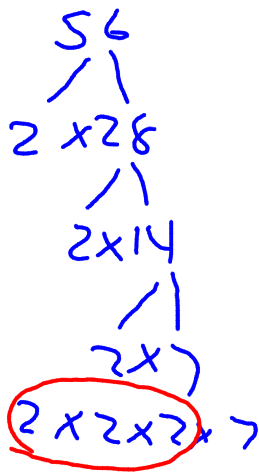
$$2 \times 2 \times 5 \times 3 \times 3$$



$$2 \times 2 \times 3 \times 3$$

$$\begin{aligned}
 \text{L.C.M} &= 2 \times 2 \times 5 \times 3 \times 3 \\
 &= 180
 \end{aligned}$$

$$\begin{aligned}
 \text{2nd} \\
 \text{L.C.M} &= 180 \times 2 \\
 &= 360
 \end{aligned}$$

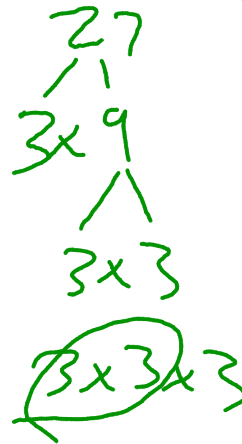
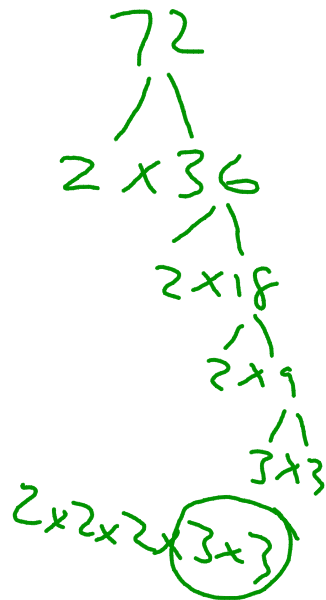


$$7 \times 2 \times 5$$

$$\boxed{2 \times 2 \times 2}$$

$$\begin{aligned}
 CF &= 2 \\
 2 \times 2 &= 4 \\
 2 \times 2 \times 2 &= 8
 \end{aligned}$$

$$CF = 2, 4, 8$$



$$\boxed{3 \times 3}$$

$$\begin{aligned}
 CF &= 3 \\
 3 \times 3 &= 9 \\
 CF &= 3, 9
 \end{aligned}$$

$$2^3 = 2 \times 2 \times 2 \leftarrow \text{all prime}$$

$$\begin{array}{c} \cancel{2}^3 \leftarrow \text{prime} \\ \vdots \text{ all prime} \\ \uparrow \\ \text{prime} \end{array}$$

$$4^3 = \underset{\substack{\uparrow \\ 2 \times 2}}{4} \times \underset{\substack{\uparrow \\ 2 \times 2}}{4} \times \underset{\substack{\uparrow \\ 2 \times 2}}{4} \leftarrow \begin{array}{l} 4 \text{ is not} \\ \text{prime} \\ 2^6 \text{ is prime.} \end{array}$$

$$\begin{aligned} 2^4 \times 5^2 &= \\ 2 \times 2 \times 2 \times 2 &= 16 \\ 5 \times 5 &= 25 \\ 16 \times 25 &= 400 \end{aligned}$$

$$2^4 \times 5^2 = 2 \times 2 \times 2 \times 2 \times 5 \times 5$$

$$= 400$$

$$5^2 \times 11 = 5 \times 5 \times 11$$

$$= 275$$

$$3^2 \times 7 \times 11 = 3 \times 3 \times 7 \times 11$$

$$= 693$$

$$2^5 \times 7 \times 13^2 = 2 \times 2 \times 2 \times 2 \times 2 \times 7 \times 13 \times 13$$

$$= 32 \times 7 \times 169$$

$$= 37856$$

275, 400, 693, 37856

806 087 137

$$= 800\ 000\ 000 + 6000\ 000 + 80000 + 7000 \\ + 100 + 30 + 7$$

$$= 8 \times 10^8 + 6 \times 10^6 + 8 \times 10^4 + 7 \times 10^3 + \\ 1 \times 10^2 + 3 \times 10 + 7$$

20 020 220

$$= 2 \times 10^7 + 2 \times 10^4 + 2 \times 10^2 + 2 \times 10$$